2/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119551

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DETAILED DESCRIPTION IS GIVEN FOR THE CONSTRUCTION AND OPERATION OF APP. FOR DETG. SORBED H AT 150-500DEGREES, I.E. UNDER CONDITIONS USUALLY USED FOR HYDROGENATION AND ISOMERIZATION REACTIONS OF HYDROCARBONS. THE APP. CONSISTS OF A REACTION VESSEL CONTG. A 2-3 MG SAMPLE OF THE CATALYST BEING TESTED, PLACED IN A FLOW SYSTEM SIMILAR TO THAT OF A CHROMATOGRAPH AND PROVIDED WITH SWITCHABLE SOURCES OF ARGON, H, AND C SUB2 H SUB4. THE AMT. OF SORBED H ON 12 TYPICAL PT, PD AND NI CATALYSTS ON VARIOUS SUPPORTS WAS TABULATED AS WAS THE INFORMATION OF SORPTION OF H AT VARIOUS TEMPS. ON PT AND NI AND PD CATALYSTS UP TO 500DEGREES. PROMOTION BY SALTS OF MN AND CR ENHANCES THE STRENGTH OF BONDING OF H TO THE METAL.

FACILITY: INST. ORG. FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

USSR

UDC 669.295:539.4.011

BORISOVA, Ye. A., SHASHENKOVA, I. I., and GLEBOVA, R. D., Moscow

"The Effect of Oxygen and Hydrogen on the Strength of Titanium Alloys"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 5, Sep-Oct 72, pp 104-110

Abstract: The effect of oxygen and hydrogen on the variation in strength of semifinished goods and parts of titanium alloys was investigated by short-term and prolonged load actions on 2-mm-thick specimens of OT4, VT6S, and VT14 alloys, depending on the presence of stress concentrators and the oxygen and hydrogen content. The experimental investigation results are analyzed by reference to diagrams showing the effects of different O and H contents on the crack sensitivity, the structural strength after annealing and hardening and aging, and the relative long-term strength of specimens with cracks. Tabulated results of the effect O and H (0.15, 0.25 and 0.35% O_2, and 0.007 to 0.045% H_2) on the mechanical properties are discussed. An increase of O and H contents over a certain level was found to be conducive to premature failure. The efficiency of H as an embrittlement agent is ten times higher than that of O. The embrittlement action of H intensifies with increasing ultimate strength. Six figures, three tables.

1/1

USSR

UDC: 669.295:621.785.34.061

BORISOVA, Yie. A., SHASHENKOVA, I. I., GLEBOVA, R. D.

"Vacuum Annealing of Titanium Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 5, 1972 pp 10-13.

Abstract: The high chemical activity of titanium at high temperatures requires that heat treatment of finished products be performed in a medium of neutral gasses or in a vacuum. This work studies the influence of various vacuum annealing modes on the service properties of titanium alloys. The studies were performed by extension of specimens with two lateral cracks symmetrically placed relative to the axis, by testing of flat specimens under hydraulic pressure, and by endurance and low-cycle fatigue testing of smooth and welded specimens. The studies performed showed that vacuum annealing causes etching of the surfaces of titanium alloy parts, particularly along the boundaries of a welded seam. Therefore, in determining the vacuum annealing mode, the operating conditions of the products to be annealed must be considered. For thin sheet-welded parts which will operate under conditions of repeated loading, vacuum annealing may be used as a final operation at temperatures of incomplete annealing for stress relief. Vacuum annealing can also be used to reduce the total content of hydrogen in an alloy. The depth of the irregularities of the surface layer increases with increasing vacuum annealing temperature and holding time.

1/1

USSR

BORISOVA, Ye. M., Scientific Research Institute of General and Pedagogical Psychology, Academy of Pedagogical Sciences of the USSR, Moscow

"Relation of Psychophysiological Components of Vocational Aptitude and the Work Efficiency of Female Weavers"

Moscow, Voprosy Psikhologii, No 3, May/Jun 73, pp 56-63

Abstract: An attempt was made to determine the dynamics of development of vocationally important psychophysiological functions in female carpet weavers, and to compare this pattern with the dynamics of growth of the acquisition of vocational skills -- labor productivity and quality of work. Women who had worked as carpet weavers for various lengths of time were studied. The criteria for development of vocational aptitude were a steady rise in production output, decline in spoilage and increase in work satisfaction. A comparison of production indices with test results showed that the development of vocational aptitude involves specific development and reorganization of motor and sensory functions.

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USSR

UDC 613.6:613.4:615.285.7.012.1

TREFILOV, V. N., FAYERMAN, I. S., and BORISOVA, Ye. P., Gor'kiy Institute of Labor Hygiene and Occupational Diseases

"Contamination of Work Clothes and Skin of Workers Engaged in the Manufacture of Metaphos and Chlorophos"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 2, 1971, pp 51-53

Abstract: Among workers engaged in the production of the organophosphorus insecticides metaphos and chlorophos, the toxic effects of chronic exposure to small quantities of the pesticides were manifested by inhibition of cholinesterase activity at the end of a shift and appearance of Heinz-Ehrlich bodies in erythrocytes and of para-nitrophenol in the urine. These shifts were equally pronounced in those wearing gas masks (to rule out inhalation as a mode of entry for the insecticides) and in those not wearing masks. The presence of metaphos and chlorophos in washings from the skin and work clothes confirmed that the skin is one of the principal routes through which organophosphorus compounds enter the body.

1/1

USSR UDC 547.298.1+547.554

BORISOVA, Ye. Ya., YUSHCHENKO, T. M., and CHERKASOVA, Ye. M., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"Aminoamides. VI. Synthesis of Aminoamides of the Pentane Series"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1173-1175

Abstract: With the view of investigating the physiological and physicochemical properties of the products obtained, work on aminoamides with the general formula II was continued and compounds of this type with $n = 4$ were synthesized from 1-dialkylamino-5-alkyl- and 1-dialkylamino-5-dialkyl-5-pentanols (I; $n = 4$) by subjecting the latter to the action of nitriles in the presence of H_2SO_4 : $R''R\,C(OH)-(CH_2)_nNR_2$ (I) + $R'''CN(H_2SO_4) \rightarrow R'''RC(NHCOR'')-(CH_2)\,NR_2$ (II). The aminopentanols (I) were prepared by a method described by T. T. Vasil'yeva et al in Izv. AN SSSR, Ser. Khim., 2817, 1970. New compounds II with $n = 4$ and R = H, R' = R''' = Et, R'' = Me; R = H, R' = R''' = Et, R'' = Ph; R = R' = R''' = Et, R'' = Me; R = R' = R''' = Et, R'' = Ph; R = H, R' = Et, R'' = Me, R''' = Bu; R = H, R' = Et, R'' = Ph, R''' = Bu; R = R' = R'' = R''' = Me; R = R' = R''' = Me, R'' = Ph were synthesized. The physical constants of these compounds are listed. In the conversion of I to

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USSR

BORISOVA, Ye. Ya., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1173-1175

II, compounds I with two alkyl groups at the carbinol C atom, such as those prepared in this instance, reacted much more readily than compounds I with one alkyl and one phenyl group at this atom. Compounds of the latter type had been investigated in earlier work. The secondary and tertiary amino-pentanols I (n = 4) that had been prepared reacted with equal facility in the conversion to aminoamides II.

2/2

Glass and Ceramics

USSR UDC [546.19+546.23+546.24]:666.1

OBRAZTSOV, A. A., and BORISOVA, Z. U., Leningrad State University imeni A. A. Zhdanov

"Electric Conductivity and Softening Point of Glasses in the As-Se-Te System"

Moscow, Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1417-1421

Abstract: This work presents results of measurement of the temperature dependence of electric conductivity and the softening interval of glasses for seven cross sections covering practically the entire area of glass formation in the As-Se-Te system. Electric conductivity was measured in the temperature interval from room temperature to T_g. Reproducibility was good for specimens taken from parallel melts. The dispersion of conductivity values did not exceed 0.1-0.2 orders of magnitude. The conductivity of the glasses varied from 10^{-11} to 10^{-4} $ohm^{-1} \cdot cm^{-1}$, the activation energy of conductivity -- from 1.7 to 0.9 eV. Replacement of Se by Te causes an increase in conductivity and decrease in activation energy. The softening temperature of the glasses varies between 50 and 170°C. As the chalcogen content increases, T_g decreases. The nature of the change of T_g as a function of Se/Te ratio, as well as the change in conductivity at the

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USSR

OBRAZTSOV, A. A., and BORISOVA, Z. U., Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1417-1421

at the softening temperature (-log σT_g) indicate changes in the structure of the glasses as Se is replaced by Te.

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USSR UDC (537.311+621.317.412):549.31:546.19

PANUS, V. P., BORISOVA, Z. U.

"Relation Between Electric and Thermal Properties of Glasses of the As-Ge-Te System"

Leningrad, Vestnik Leningradskogo universiteta, No 10, Fizika i khimiya, No 2, May 71, pp 125-130

Abstract: A study of glasses of the As-Ge-Te system and other systems with three-dimensional structures and similar bonds shows nearly constant conductivity values and other physicochemical properties at the established softening temperatures. The regular interrelated variations of the electrical parameters and softening temperatures are independent of the conductivity of the glass; they appear to be governed by the nature of the thermal excitation of the corresponding bonds and the characteristics of the shortrange order for the atomic arrangement in the glass. Glasses with dissimilar three-dimentional structures (of the As-Se system) exhibit different conductivity values at softening temperatures. In order to compare the physicochemical properties of dissimilar systems, it seems appropriate to use temperatures

USSR

PANUS, V. P., et al, Vestnik Leningradskogo universiteta, No 10, Fizika i khimiya, No 2, May 71, pp 125-130

which are equally removed from the established softening temperatures.

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--GLASS FORMATION IN METALS OF ARSENIC CHALCOGENIDES AND RARE EARTH ELEMENTS -U-

AUTHOR-(02)-BORISOVA, Z.U., SHKOLNIKOV, YE.V.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 383-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RARE EARTH METAL, CHALCOGENIDE GLASS, SELENIDE, ARSENIC COMPOUND, MICROHARDNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1513 STEP NO--UR/0363/70/006/002/0383/0384

CIRC ACCESSION NO--AP0120294

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0120294
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF GLASS FORMATION IN MELTS OF SULFIDES OR SELENIDES OF AS WITH SULFIDES OR SELENIDES OF PR (ND) WAS STUDIED. ALL THE SAMPLES WERE PREPD. BY MELTING AS SUB2 SE SUB3 OR AS SUB2 S SUB3 WITH THE RESP. RARE EARTH CHALCOGENIDES IN EVACUATED QUARTZ AMPULS AT 900-1000DEGREES. THE EXPTL. D. AND MICROHARDNESS (AT 50-G LOADS) FOR THE MATERIALS PREPD. ARE TABULATED. INCREASING THE RARE EARTH METAL CONTENT IN THE MELTS WITH DECREASING COOLING RATE RESULTED IN PARTIAL CRYSTN. OF THE MELTS; THIS WAS ALSO SHOWN BY INCREASED D. AND ELEC. COND., AND A DROP IN MICRO HARDNESS. CRYSTN. AND PHASE SEPN., WERE OBSERVED IN THE SULFIDE MELTS; ON GOING FROM THE SULFIDE TO THE TELLURIDE MELTS THE GLASS FORMATION REGION DECREASES SHARPLY. ALTHOUGH ONLY THE GLASS FORMATION OF CHALCOGEN-AS MELTS CONTG. ONLY PR OR ND WAS STUDIED, SIMILARITY IN CHEM. PROPERTIES OF LANTHANIDE GROUP ELEMENTS SUGGESTS THAT ANALOGOUS PHENOMENA WILL BE OBSERVED FOR MOST OF THE OTHER RARE EARTH ELEMENTS. THIS ASSUMPTION REMAINS TO BE EXPTL. VERIFIED. FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--MOESSBAUER EFFECT IN AN ARSENIC, SELENIUM, TIN SEMICONDUCTOR SYSTEM -U-

AUTHOR-(04)-BORISOVA, Z.U., VASILYEV, L.N., SEREGIN, P.P., SHIPATOV, V.T.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 533-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ARSENIC, SELENIUM, TIN, GLASS COMPOSITION, VACUUM MELTING, SEMICONDUCTOR CRYSTAL, MOSSBAUER SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1794 STEP NO--UR/0449/70/004/003/0533/0536

CIRC ACCESSION NO--AP0118763

UNCLASSIFIED

2/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118763

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VACUUM MELTING WAS USED TO SYNTHESIZE A NO. OF AS, SE, SN GLASSES, HAVING THE COMPN. AS SUB1.0 SE SUBX SN SUBY, WHERE X EQUALS 0.8-9.0 AND GAMMA EQUALS 0.015-2.30. THE PRIME119 SN NUCLEUS WAS THE ONE UTILIZED TO DET. ISOMER SHIFT AND QUADRUPOLE SPLITTING BY MOESSBAUER SPECTROSCOPY. TO ACT AS STDS., ALL OF THE KNOWN BINARY COMPDS. BETWEEN SN PLUS AS AND SE WERE SYNTHESIZED SN SUB6 AS, SN SUB3 AS SUB2, SN SUB4 AS SUB3, SNAS, SN SUB3 AS SUB4, SN SUB2 AS SUB3, SNSE, SNSE SUB2, AND SN SUB2 SE SUB3). THE LAST COMPD. MAY NOT EXIST AS A SEP. MOIETY, SINCE ITS SPECTRUM IS PRECISELY THE SAME AS THE SUPERIMPOSED SPECTRA OF SNSE AND SNSE SUB2. THE TERNARY ALLOYS OF AS, SE, AND SN ARE NOT SPECIFIC COMPDS. WITH UNIQUE STRUCTURES. IN THE VITREOUS AREAS OF THE ALLOY, ONLY SN(IV) WAS FOUND. IN SUCH REGIONS, EVEN WHEN ALL OF THE SN WAS THE 119 ISOMER, NO CHARACTERISTIC SN(II) LINES WERE FOUND IN THE SPECTRUM. FOR THE SERIES OF ALLOYS CHARACTERIZED BY ASSE SUB0.6 SN SUBY, ASSE SUB1.0 SN SUBY, AND ASSE SUB1.5 SN SUBY, BOTH SN(II) AND SN(IV) LINES WERE FOUND IN THE SPECTRUM TAKEN AT THE CRYST. REGIONS. AS THE SN CONTENT OF THESE REGIONS WAS INCREASED, THE SN(IV) LINES TEND TO DISAPPEAR AND AS THE PERCENT SN IS FURTHER INCREASED, IN ADDN. TO THE SPECTRUM CORRESPONDING TO CRYST. SNSE, FURTHER LINE CORRESPONDING TO A SN-AS COMPD. BEGIN TO APPEAR. IN CRYSTD. GLASS ALLOYS OF THE ENRICHED SE TYPE, SUCH AS ASSE SUB2.5 SN SUBY, ASSE SUB4.0 SN SUBY, AND ASSE SUB9.0 SN SUBY, ONLY SN(IV) LINES ARE FOUND IN THE MOESSBAUER SPECTRUM WITH THE ISOMER SHIFT CORRESPONDING TO CRYST. SNSE SUB2.

UNCLASSIFIED

3/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118763

ABSTRACT/EXTRACT--HOT, IN A POLYCRYST. ALLOY, SUCH AS ASSE SUB2.5 SN SUB1.5, SN(II) LINES ARE FOUND WITH AN ISOMER SHIFT CHARACTERISTIC FOR CRYST. SNSE. SPECIFIC GLASS COMPNS. WERE ANNEALED TO PROMOTE A GREATER DEGREE OF CRYSTALLINITY. ASSE SUB2.5 SN SUB0.4 GLASS AFTER BEING ANNEALED FOR 1500 HR AT 200DEGREES GAVE RISE TO THE CHARACTERISTIC SNSE SUB2 SPECTRUM, WHILE ASSE SUB1.5 SN SUB0.1, SUBJECTED TO AN ANNEL AT 250DEGREES FOR 750 HR GAVE RISE TO THE SNSE SPECTRUM. X RAY INVESTIGATION OF THESE SAMPLES CONFIRMED THE RESULTS OF THE MOESSBAUER STUDY. IN CHALCOGENIDE GLASSES OF THIS SYSTEM, SN IS TETRAVALENT BONDED ONLY TO SE AND THE STRUCTURE IS ROUGHLY TETRAGONAL WITH A COORDINATION NO. OF 6. ALTHOUGH THERE WAS NO UNIQUE STRUCTURE IN THESE TERNARY COMPNS. A UNIT STRUCTURE, SE SUB3 SN,SE,ASSE SUB2, DOES EXIST IN THE VITREOUS PHASE TO SOME DEGREE.

UNCLASSIFIED

USSR

UDC 537.311:546.3-19'87'289'23

PAZIN, A. V., and BORISOVA, Z. U.

"Electrical Conductivity of Glasses in the System Bismuth-Germanium-Selenium"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, No 6, Jun 70, pp 1215-1218

Abstract: The region in which glass formation takes place in the system Bi-Se-Ge was determined in earlier work by the authors (Vest. LGU, 22, 140, 1969). The electrical conductivity and activation energy of conduction of vitreous alloys in this region were determined in work reported in this instance. Depending on the composition of the alloys, the conductivity varied in the minus $\lg \sigma_{20^\circ}$ = 15.6 - minus $\lg \sigma_{20^\circ}$ = 16.5 range, while the corresponding changes in the activation energy of conduction were in the 1.91-2.45 ev range. Increases in the vitreous alloys of the content of Bi between 2.5 and 10 at. % and changes in the content of Ge had practically no effect on either the conductivity or the activation energy of conduction. Increases of the content of Sb in vitreous Sb-Se-Ge alloys with a Ge content of 15-30 at. % also did not affect either the conductivity or activation energy of conduction. This indicated that structural units with the composition $SbSe_{1.5}$ and $BiSe_{1.5}$ did not form in these alloys, but formation of units containing all three alloy components took place. Vitreous Sb-Se-Ge alloys with a Ge content $< 15\%$ behaved differently in this respect; with an increasing content of Sb in them, a regular increase in conductivity and a decrease in the activation energy of conduction were observed.

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ELECTRONICS

Amplifiers

USSR

IOSIFOVICH, BELEN'KIY BORIS, and BORISOVICH, MINTS MARK

"Highly Sensitive Direct Current Amplifiers with Converters" (Vysokochuvstvitel'nyye Usiliteli Postoyannogo Toka S Preobrazovatelyami), Leningrad, Izd-vo "Energiya," 1970, 8,000 copies, 384 pages

Abstract: The book is devoted to the design and application of highly sensitive direct current amplifiers (UPT) with input signal conversion. Galvanometric converters and converters of small direct current signals to variable voltage (modulators) are examined in detail. Special attention is given to the methods of engineering calculations of amplifiers and to the protection of amplifiers from interference. Circuits and the characteristics of highly sensitive UPT with converters manufactured by industry are presented, as well as, a comprehensive bibliography.

The book is intended for specialists working in the development and application of measuring and automatic equipment intended for amplification, measurement, and registration of small fixed and slowly changing signals, and may be useful to students of higher institutes of learning.

The book contains numerous formulas, figures, and 986 citations in the bibliography.

USSR

IOSIFOVICH, B. B., and BORISOVICH, M. M., "Highly Sensitive Direct Current Amplifiers with Converters" (Vysokochuvstvitel'nyye Usiliteli Postoyannogo Toka S Preobrazovatelyami), Leningrad, Izd-vo "Energiya," 1970, 8,000 copies, 384 pages

The chapter headings are as follows:

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USSR

UDC 541.135.2 + 621.359.7

MELESHKO, V. P., ISAYEV, N. I., PESTUSHKO, N. P., DEREVYANKO, L. A., TSYGUROVA, L. I., and BORISOVSKIY, I. V., Voronezh Technological Institute

"Electrochemical Regeneration of the Mixed Salt Forms of Anion Exchanger AV-17"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 2, Feb 71, p 482

Abstract: Completeness of regeneration of mixed chloride and sulfate forms of the anion exchanger AV-17 was studied as a function of current density, time and the ratio of above ionic forms. It was shown that the chloride-form regenerates better than the sulfate form. When the current density applied was 15 ma/cm^2, after 5 hrs of regeneration and Cl:SO_4 ratio 1:1, 32.5% of the Cl-form regenerated, and 30% of the SO_4-form; with a 3:1 ratio of Cl:SO_4 the values were 34% and 31% respectively.

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USSR

B

ALYAKISHEV, S. A., BORISOVSKIY, S. P., MELEKHIN, G. B., OSTAPCHENKO, YE. P.

"Effect of the Discharge Parameters in Ne^{20} on the Magnitude of Laser Beam Absorption"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Engineering. Scientific and Technical Collection. Gas Discharge Devices), 1970, vyp. 1 (17), pp 27-36 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D381)

Translation: The energy absorption of a laser beam in the positive column of glow discharge of Ne^{20} with various discharge parameters is measured for the central frequency of the absorption line $2p_4-3s_2$ ($\lambda = 0.6328$ microns). The correspondence between the values of the total radiation energy absorption in the discharge gap and the absorption along its axis per unit length of discharge considering the divergence and nature of energy distribution in the transverse cross section of the laser beam and also the nature of distribution of absorption with respect to the radius of the discharge gap is established.

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USSR UDC 539.294

ZAVADOVSKAYA, YE. K., BORISOVSKIY, V. V., and GOLOVCHANSKIY, YE. M., Tomsk Polytechnic Institute imeni S. M. Kirov

"Investigation of Stored Energy in Alkali Halide Crystals"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 127-129

Abstract: Changes in the properties of a solid at the moment of irradiation are determined by the amount of energy absorbed. Permanent changes in the properties following irradiation are characterized by the amount of energy stored, which in turn is determined by the concentration of radiation defects and their energy of formation. Stored energy is a more complete characteristic than are the changes in optical, electrical and other properties of the solid which take place under the influence of radiation. Stored energy as a characteristic of integral defects in a solid is of interest in the field of large irradiation doses when the concentration of defects can not be determined, for example, from the spectra of optical absorption. Stored energy has been most thoroughly studied in alkali-halide crystals, and considerable attention has been given to investigating the kinetics of accumulating stored energy in NaCl crystals. The kinetics of accumulating stored energy have been obtained as a function of the chemical composition for crystals of NaCl.
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USSR

ZAVADOVSKAYA, YE. K., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 127-129

KCl, KBr in a very narrow range of doses. The authors in this article study the kinetics of accumulating stored energy in these crystals as a function of chemical composition in a wider range of doses. They determined the stored energy using the method of diffusion. The authors describe their experiment and discuss it fully using graphs. They find that in the investigated crystals the rate of accumulating stored energy and its maximal value are greater as the energy of the lattice is greater, thus confirming the previous assumptions that the properties of solids are a function of the energy of the lattice. The article contains 2 figures and 11 bibliographic entries.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SEPARATION OF PETROLEUM AT THE KREMENCHUG PETROLEUM REFINERY -U-

AUTHOR--BORISYUK, YE.N.

B

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 49-50

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PETROLEUM REFINERY, PETROLEUM REFINING PROCESS, GASOLINE, PETROLEUM DESALTING, PETROLEUM DEHYDRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1960 STEP NO--UR/0318/70/000/005/0049/0050

CIRC ACCESSION NO--AP0133804

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133804
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AFTER PRELIMINARY DEHYDRATION AND DESALTING, THE OIL WAS TREATED IN A HYDROCYCLONE AS A FILM AT LOW PRESSURE TO REMOVE THE DISSOLVED GASES. THE PARTLY STABILIZED PETROLEUM WAS THEN DEHYDRATED AND DESALTED IN A 2ND STATE. THE VAPOR FROM THE HYDROCYCLONE WAS COOLED TO 30DEGREES TO GIVE GASOLINE AND GASES. THE PARTIAL STABILIZATION IMPROVED THE OPERATION OF THE ATM. VACUUM DISTN.
FACILITY: KREMENCHUG, NEFTEPERERAB. ZAVOD. KREMENCHUG, USSR.

UNCLASSIFIED

USSR

UDC 553.495

BORKOV, F. P., YEGOROV, N. I., and ZAYTSEV, Ye. V., "Krasnodarneftegeofizika," Moscow Geological Prospecting Institute imeni S. Ordzhonikidze)

"Special Features of the Formation of High Uranium Concentrations in Oxidizing Conditions"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geologiya i Razvedka, No 5, May 71, pp 51-57

Abstract: Special features of the localization and formation of high uranium concentrations in an oxidizing medium are investigated. The presence of a weathering crust is the characteristic feature of the geological zone structure. The uranium concentrations are nonequilibrium. The coefficient of radioactive equilibrium fluctuates between 1 and 78%. The shift of radioactive equilibrium toward uranium and a nearly total absence of radium in samples indicate the recent age of mineralization and the continuation of deposition and redeposition processes. It is concluded that the ore was formed in the process of weathering crust formation because of the uranium redistribution liberated from the ore as a result of oxidation, on the one hand, and introduction of uranium from ground waters rich in ferro-hydrooxides, jarosite, and phosphate-ions, on the other hand.

1/1

USSR

BORKOVEKIY, B. A., GALUZINSKIY, G. P., KATKOV, A. F., ROMANTSOV, V. P.

"Algorithmic Hybrid Systems"

Algoritmicheskiye Gibridnye Sistemy [English Version Above], Kiev, Nauk. Dumka Press, 1972, 116 pages (Translated from Referativnyy Zhurnal, No 1, 1973, Abstract No 1 V783 K).

Translation: Algorithmic hybrid computer systems are systems in which the method of representation of information is hybrid, i.e., both in analog and digital representations, while the method of solution is algorithmic. This monograph studies theoretical and practical problems of the construction of computer systems consisting of a digital automaton or digital computer and analog circuits modeling the numerical integration operator considering boundary conditions, acting as standard subroutines of a special type.

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USSR

UDC 8.74

BORKOVSKIY, B. A., GALUZINSKIY, G. P., KATKOV, A. F., ROMANTSOV, V. P.

"Algorithmic Hybrid Systems"

Kiev, Algoritmicheskiye gibridnyye sistemy (cf. English above), "Nauk. dumka", 1972, 116 pp, ill. 68 k. (from RZh-Matematika, No 1, Jan 73, abstract No 1V783K)

Translation: Algorithmic hybrid computer systems are systems in which the method of representing the information is hybrid i. e., in continuous quantities and codes and the method of solution is algorithmic. This monograph deals with theoretical and practical questions of constructing computer systems made up of a digital automaton, or a digital computer, and analog circuits which model the operator of numerical integration with regard to boundary conditions which play the part of standard sub-programs of a special type.

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USSR

UDC 681.3

BORKOVSKIY, B. A., VOLLERNER, A. N., KATKOV, A. F., AULIK, M. N., ROMANTSOV, V. P., TYUTIN, A. A.

"Modeling Mathematical Machines with Variable Structure"

Modeliruyushchiye Matematicheskiye Mashiny S Peremennoy Strukturoy, [English Version Above], Kiev, Nauk. Dumka Press, 1970, 248 pages, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V602 K, unsigned).

Translation: Results are presented from theoretical studies of models with variable structure, designed for modeling of mathematical operations, systems of finite equations and linear differential equations. Significant attention is given to methods of studying models with variable structure and recommendations are given for their engineering planning. The book is designed for engineers, scientific workers and graduate students interested in electronic modeling.

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USSR

UDC 669.01:621.78

BOL'SHAKOV, V. I., PIMAKHOV, D. P., ORLOV, L. G., TYLKIN, M. A., ZOTEYEV, V. S., and BORKOVSKIY, YU. Z.

"The Effect of Thermomechanical Treatment on the Impact Ductility, Crack Propagation, and Disintegration Viscosity"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4(82), Jul-Aug 73, p 32

Abstract: Results are presented of an investigation of the mechanical properties of 14Kh2GMR steel after the usual heat treated and after high-temperature thermomechanical treatment (HTMT). Tabulated repoint, relative elongation, relative contraction, fatigue limit, and impact ductility at various temperatures. HTMT was found to somewhat increase the strength characteristics of the steel. HTMT does not lower the plasticity, it substantially increases the impact strength at the expense of the increasing share of the work of crack propagation. The increase of structural strength of 14Kh2GMR steel by HTMT lasts up to a 650° C temper temperature. The creation of a stable substructure by hardening increases the resistance of the steel to brittle failure and decreases its susceptibility to stress concentrations. Two tables, four bibliographic references.

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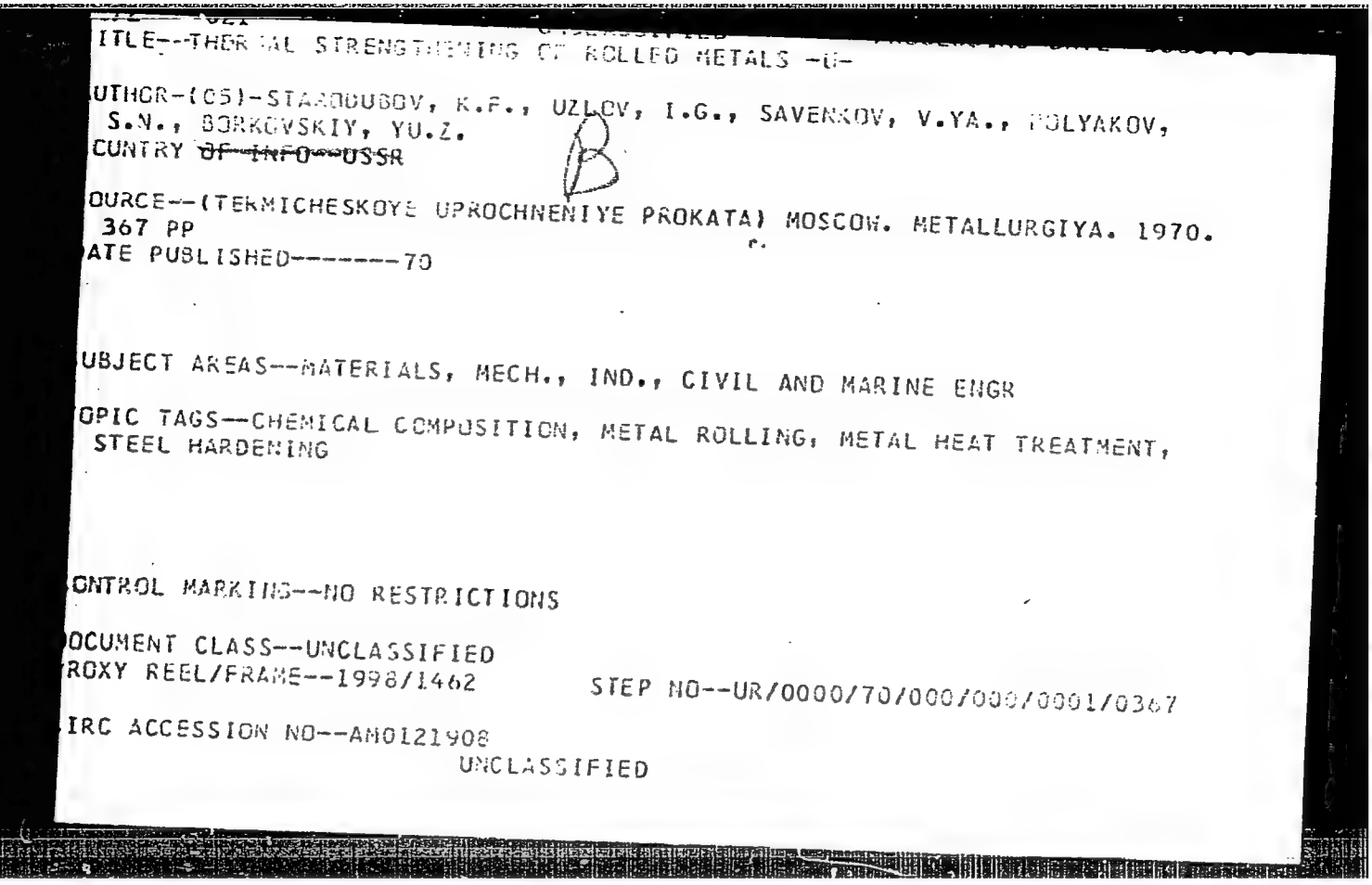

TITLE--THERMAL STRENGTHENING OF ROLLED METALS -U-

AUTHOR-(05)-STAROBUBOV, K.F., UZLOV, I.G., SAVENKOV, V.YA., POLYAKOV, S.N., BORKOVSKIY, YU.Z.

COUNTRY OF INFO--USSR

SOURCE--(TEKHNICHESKOYE UPROCHNENIYE PROKATA) MOSCOW. METALLURGIYA. 1970. 367 PP

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CHEMICAL COMPOSITION, METAL ROLLING, METAL HEAT TREATMENT, STEEL HARDENING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1462 STEP NO--UR/0000/70/000/000/0001/0367

IRC ACCESSION NO--AN0121908

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
IRC ACCESSION NO--AM0121908
BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION 7. CHAPTER I THERMAL STRENGTHENING OF ROLLED METALS (THE THERMOMECHANICAL AND THERMAL MACHINING OF ROLLED METALS UNDER CONDITIONS OF MASS PRODUCTION) 14. II THE TECHNOLOGY OF THERMAL STRENGTHENING OF ROLLED METALS 37. III THE CHEMICAL COMPOSITION OF STEEL FOR THERMAL STRENGTHENING 190. IV THE STRUCTURE OF THERMALLY STRENGTHENED STEEL ?. V THE PROPERTIES OF THERMALLY STRENGTHENED STEEL 248. LITERATURE 358. INFORMATION IS GIVEN ON THE THEORY OF THERMAL AND THERMOMECHANICAL TREATMENT APPLICABLE TO STRENGTHENING ROLLED METALS FROM LOW CARBON, MEDIUM CARBON AND ALSO LOW ALLOY STEEL. THE BOOK IS DESIGNED FOR A WIDE RANGE OF TECHNICAL ENGINEERS AT INSTITUTES, METALLURGY PLANTS, ENTERPRISES OF THE BUILDING INDUSTRY, MACHINE CONSTRUCTION.

UNCLASSIFIED

USSR

UDC 621.315.592

BORMAN, D.V.

"Measuring Technique For Lifetimes Of Excess Charge Carriers In Epitaxial Films"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 692-697

Abstract: This work is concerned with an investigation of a proposed method of direct measurement of the lifetime τ of excess carriers in an epitaxial film separated from a semiconductor substrate by a p-n junction. The proposed method of direct measurement involves excitation by light of the carriers in the material of the film only when it is "separated" from the substrate by a cut-off voltage. Simultaneously with the cut-off voltage at the p-n junction, a potential difference is established along the film, necessary for measuring τ with respect to the photoeffect of the film. The proposed method excludes the effect of the substrate on the results of measurement of the lifetime of excess carriers in a film by use of cut-off light filters. Measurement of the lifetime τ of carriers in the film is accomplished with a phase tau-meter developed by the author, with excitation by light. The investigation was conducted on silicon specimens, each with a monocrystalline film. The proposed method made it possible to measure the magnitude τ in silicon films with a thickness from 13 ÷ 15 micrometer. 4 fig. 2 tab. 21 ref. Received, 2 Nov 1970; in final rewording, 3 Aug 1971.

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ON THE OPERATION OF ELECTRIC LIGHTING LABORATORY -U-

AUTHOR-(02)-BORMIN, V.V., AKIMOV, A.P.

B

COUNTRY OF INFO--USSR

SOURCE--SVETOTEKHNIKA (USSR), NO. 1, P. 20 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--VISIBLE LIGHT, ELECTRIC RESEARCH FACILITY, INDUSTRIAL FACILITY, TEST FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0130 STEP NO--UR/0311/70/000/001/0020/0020

CIRC ACCESSION NO--AP0130892

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0130892
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE SCOPE, FACILITY AND THE FUTURE PROGRAMME OF THE LABORATORY CONSTRUCTED IN 1965 AT THE ARJATCVSKI ELECTRIC LIGHTING FACTORY AS AN AID TO THE EXPERIMENTAL AND CONSTRUCTIONAL SIDE OF THE WORK.

UNCLASSIFIED

USSR

UDC 621.394.144

AKIMOV, A. YE., BORMOTOV, N. N., KOLTYSHEVA, G. V., and MIRONOVA, L. A.

"Optimization of the Synchronization Process in Discrete Message Transmission Systems"

Moscow, Elektrosvyaz', No 11, 1970, pp 61-66

Abstract: The authors conduct a heuristic analysis of the synthesis of an ideal synchronization process. Possible approaches are considered for realizing ideal synchronization for Gaussian channels and for channels with fading. Synchronization accuracy characteristics are calculated along with false synchronization probability and the optimal thresholds for the synchrosignal receiver. The authors thank K. A. Meshkovskiy for his interest in the article. Original article: five figures, one table, 13 formulas, and 10 bibliographic entries.

1/1

USSR

UDC: 621.374.5(088.8)

)RMOTOV, Yu. D., IVKIN, I. V., KARULIN, A. P., PARSANOV, A. P.

"A Delay Line"

USSR Author's Certificate No 280537, filed 18 Apr 67, published 9 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, abstract No 6G312 P)

Translation: A delay line is proposed which is equipped with a ferromagnetic element and a magnetizing winding which controls the delay time by changing the permeability of the ferromagnetic element. To simplify the design, a multilayered permalloy film which serves as a shield and return conductor for the delay line is used as the ferromagnetic element.

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9.1900

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A154/0A26

AUTHORS: Mordukhovich, N.G., Bormotov, Yu.L.

TITLE: A Miniature High-Frequency Multiposition Switch

PERIODICAL: Byulleten' izobreteniy, 1960, No. 20, pp. 27-28

TEXT: Class 21c, 39_{01}. No. 132697 (649625/26 of Jan 6, 1960). This miniature high-frequency multiposition switch contains a stator, made in the form of a hollow cylinder made of insulating material with contact lugs evenly spaced around its periphery and inside which is located a cylindrical rotor, which is fixed on the axis of the switch, is made of insulating material and provided with spring contacts, and a ball detent. The switch is distinguished by the fact that, in order to increase the stability of contact resistance, the movable contacts of the switch, designed for closing the fixed contact lugs in pairs, are made in the form of rollers, sprung with flat springs.

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USSR

UDC 669.046.546.2

BORNATSKIY, I. I.

"Desulfuration of Metals"

Desul'furatsiya Metalla [English Version Above], Metallurgiya Press, 1970, 320 pp

Translation of Annotation: This monograph analyzes problems related to the effect of sulfur and sulfur-containing compounds on the physical, chemical, and technological properties of iron-carbon alloys. The mechanisms and kinetics of processes of desulfuration used in ferrous metallurgy are discussed. Considerable attention is given to the problem of reducing the content of sulfur during sintering of iron ores and concentrates. Also discussed are the desulfuration of cast iron and steel during blast furnace, converter, open-hearth furnace, arc furnace, electric slag, and electric vacuum processes and desulfuration outside the furnace. A comparative analysis is given of the processes of desulfuration in the blast furnace, open hearth furnace, electric arc furnace, and oxygen converter.

The monograph is intended for engineering-technical workers of metallurgical plants, and scientific research, planning, and teaching institutes, and can

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

USSR

BORNATSKIY, I. I., Desul'furatsiya Metalla, Metallurgiya Press, 1970, 320 pp

also be used by students at metallurgical schools. 105 figs; 124 tables; 187 bibliographic refs.

Table of Contents

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BORNATSKIY, I. I., Desul'furatsiya Metalla, Metallurgiya Press, 1970, 320 pp

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BORNATSKIY, I. I., Desul'furatsiya Metalla, Metallurgiya Press, 1970, 320 pp

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BORNATSKIY, I. I., Desul'furatsiya Metalla, Metallurgiya Press, 1970, 320 pp

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USSR

BORNATSKIY, I. I., Desul'furatsiya Metalla, Metallurgiya Press, 1970, 320 pp

6/6

USSR

UDC 512.25/.26+519.3.330.115

BORNGREBER, E. E.

"Conclusion of Formulas for Solution of One Problem of Bellman"

Mat. Vopr. Formir. Ekon. Modeley [Mathematical Problems of Formation of Economic Models -- Collection of Works], Novosibirsk, 1970, pp 110-117 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V580 by I. Romanovskiy).

Translation: Explicit formulas are established for optimal solution of one particular problem of dynamic programming.

1/1

USSR

BOROB'YEV, V. A.

"Modeling of a System of Parallel Processors in R-LYaPAS"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 51, Novosibirsk, 1972, pp 82-96 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V625, by the author).

Translation: A set of L-operators from the second level of R-LYaPAS is presented, designed for description of structural models of computer systems. The completeness of the set is demonstrated. Further enrichment of the method depends on the specific requirements of the user and is achieved by accumulation of L operators in the library of subroutines of R-LYaPAS.

USSR

UDC 518.5:681.3.06

BOROBKOV, A. A.

"Determination of Confidence Interval of Binomial Distribution"

Uch. Zap. Perm. Un-t [Scientific Writings of Perm' University], 1970, No 220, pp 164-167, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V667).

No Abstract.

1/1

USSR UDC 539.375:539.385

BORODACHEV, N. M., Institute of Civil Aviation Engineers, Kiev

"The Dynamic Problem of a Crack in the Case of Longitudinal Shear Deformation"

Kiev, Problemy Prochnosti, No 4, Apr 73, pp 23-25

Abstract: The author considers an elastic isotropic body with a fine internal "tunnel" crack. The body is subjected to the action of shearing forces which vary in time in accordance with a harmonic law. This case is also termed pure shear, or antiplane deformation. The problem reduces to a mixed boundary value problem for the Helmholtz equation. An exact solution for this problem is found by using elliptical coordinates and Mathieu functions. A formula is derived for determining the coefficient of stress intensity. As a numerical example, the author considers the case where shearing forces are uniformly distributed along the edges of the crack.

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USSR

UDC 624.131.54:153.525

BORODACHEVA, E. N.

"Displacements and Stresses in Soil Underlying a Rigid, Symmetrically Loaded Ring-Shaped Foundation"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 4, 1972, pp 1-3

Abstract: Numerous studies devoted to compression of subfoundation material in the case of flat, ring-shaped foundations exercising a vertical, centrally applied force, with the material considered to be a linearally deformed medium in the form of a homogeneous half-space, were mostly concerned with normal stresses and vertical displacements directly under the foundation. In this study, radial and vertical displacements of the entire boundary of subfoundation compressed material are considered, along with displacements and stresses appearing from the action of the ring foundation on the material.

Formulas, intended mainly for practical use, were derived for the following: 1) displacement components at any point within the soil massif; 2) distribution of normal stresses underneath a ring-type foundation; 3) radial displacements at any point on the boundary of the compressed subfoundation material; 4) vertical displacements of that boundary; and 5) subsidence within the compressed material.

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USSR

BORODACHEVA, F. N., Osnovaniya, Fundamenty i Mekhanika Gruntov, No 4, 1972, pp 1-3

To facilitate practical calculations, specific numerical values are worked out for various terms of the formulas, and given in tabular form.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ORGANOSILICON POLYISOCYANATES -U-

AUTHOR-(05)-BORODAVCHENKO, YE.S., SOBOLEVSKIY, M.V., NOVITSKIY, E.G., SEVERNYY, V.V., SHELUDYAKOV, V.D.

B

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,380
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, ORGANIC ISOCYANATE, CHEMICAL PATENT, SILOXANE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1464 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0124863

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128863

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ORGANOSILICON POLYISOCYANATES ARE PREPD. BY TREATING POLY(ORGANOSILOXANES) CONTG. AN OH GROUP WITH CLME SUB2 SI(CH SUB2) SUB3 NCO IN THE PRESENCE OF AN HCL ACCEPTOR, E.G. PYRIDINE.

UNCLASSIFIED

USSR

UDC 539.4:536.453

BORODAVKO, V. A.

"Investigation of the Influence of Elevated Temperatures Upon the Mechanical Properties of the Bimetal D16T+VT1-1"

Sb. Nauch. Tr. Kiyev. In-t Grazhd. Aviatsii (Collection of works of the Kiev Institute of Civil Aviation Engineers, No 4, 1971, pp 52-53 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1417 by A. I. Platov)

Translation: Note is taken of the fact that the bimetal, the basis of which is the aluminum alloy D16T, upon which a thin layer of titanium alloy VT1 is applied, possesses high specific strength and heat resistence. However, for various conditions the mechanical characteristics of this bimetal are unknown. This article considers the mechanical properties of bimetal D16T+VT1-1 at elevated temperatures. Samples with a thickness of 1.28 mm, a width of 20 mm, and a layer thickness of VT1 equal to 0.25 mm, were tested. Investigation of the static and fatigue characteristics was conducted at temperatures of 20, 200, and 350°. The endurance of the samples was investigated on the basis of 5×10^5 cycles at a load frequency of 40 cycles perminute and a cycle-asymmetry coefficient of R = 0. It is pointed out that the bimetal behaves like a plastic material, deformation of the samples is considerable, a neck is formed prior

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1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF SODIO ACETOACETIC ESTER WITH TRANS,2,BUTENE OXIDE AND OF SODIUM BENZOYLACETIC ESTER WITH PROPYLENE OXIDE AND TRANS,2,BUTENE

AUTHOR-(04)-TEMNIKOVA, T.I., MARKINA, G.V., BORODAVKO, V.A., YASKINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 739-43

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LACTONE, IR SPECTRUM, MAGNETIC RESONANCE, ORGANOSODIUM COMPOUND, ACETATE, ORGANIC OXIDE, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1953 STEP NO--UR/0366/70/006/004/0739/0743

CIRC ACCESSION NO--AP0125542

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125542
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTIONS GAVE ALPHA,ACETYL,BETA,GAMMA,DIMETHYL,GAMMA, BUTYROLACTONE,ALPHA,BENZOYL,GAMMA,METHYL,GAMMA,BUTYROLACTONE (I), AND ALPHA,BENZOYL,BETA,GAMMA,DIMETHYL,GAMMA,BUTYROLACTONE. THE STRUCTURES OF THESE COMPDS. WERE DETD. BY IR AND PMR SPECTROSCOPY. THE DECARBOXYLATION OF I GAVE KNOWN MECH(OH)CH SUB2 CH SUB2 COPH. THESE LACTONES CONTAIN CIS-H ATOMS IN BETA AND GAMMA POSITIONS.
FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.371.332

BORODAVKO, Yu. N., TOLSTOV, V. V., KAYNARA, V. N., and GAPONOV, A. P.

"Investigating the Structure of Radio Signals Reflected from the Ionosphere on the Basis of an Analysis of the Statistical Parameters for Their Orthogonal Components"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972, pp 321-325 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A329)

Translation: On the basis of a detailed analysis of the characteristics of a mathematical model represented by a vector with normally correlated orthogonal components, a method is proposed for investigating the structure of radio signals reflected from the ionosphere, based on the measurement of the statistical parameters of their normal coordinates. Bibliography of four. A. L.

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USSR

UDC 537.312.62

GALKIN, A. A., Academician of the Academy of Sciences UkrSSR, BORODAY, B. I., Zil'BERMAN, L. A., IVANCHENKO, YU. M., SVISTUNOV, V. M., Donets Physicotechnical Institute of the Academy of Sciences UkrSSR

"Role of Low-Frequency Fluctuations in the Josephson Effect"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 3, 1971, pp 556-558

Abstract: The role of low-frequency fluctuations which lead to variations in the Josephson current as a function of anomalous current-voltage characteristics and magnetism is discussed. It is noted that for super conducting tunnel systems it is possible to establish phase coherence throught the barrier to ensure tunneling of paired electrons. The presence of fluctuations comparable with the binding energy of the barrier can considerably effect the behavior of Josephson contacts, and many theoretical and experimental studies have been devoted to the effect of thermal fluctuations on the characteristics of superconducting tunneling. Tunnel contacts of the type Sn-I-Sn with specific resistance 0.01-0.02 ohm·mm^2, a high ratio I_{exp}/I_{theor} ~87-92%, and with a dependence of the critical current on the magnetic field close to $\sin \pi H/H_0 / \pi H/H_0$ were studied. For all samples the 1/2

USSR

GALKIN, A. A., et al., Doklady Akademii Nauk SSSR, Vol 196, No 3, 1971, pp 556-558

transition width did not exceed twice the Josephson penetration depth ($2w \sim 2\lambda_j$). Since fluctuation frequencies were considerably less than the characteristic frequencies of the system, the capacitance C and the inductance L of the tunneling and the external loop could be neglected in order to simplify the calculations. A graph of the effect of low-frequency fluctuations on the variation of Josephson current with magnetism and the initial segments of the current-voltage characteristics for different noise voltages shows that the presence of noise voltages leads to the rise of a resistance state. The experiment showed that noise voltages result in the envelop of oscillations of the superconducting tunnel current in magnetic fields dropping more rapidly than 1/H and ultimately in the oscillations completely disappearing in strong noises. This is said to demonstrate the significance of low-frequency noises in superconducting tunneling.

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1/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPLOSION STABILITY OF POTASSIUM PERSULFATE -U-

AUTHOR-(03)-LAPSHIN, A.I., BORODAYEVSKIY, V.YE., BATSANOV, S.S.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 154-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, ORDNANCE

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, ELECTRON PARAMAGNETIC ANALYSIS, IR SPECTRUM, MOLECULAR STRUCTURE, GAMMA IRRADIATION, CHEMICAL STABILITY, EXPLOSIVE, POTASSIUM COMPOUND, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1408 STEP NO--UR/0456/70/004/002/0154/0159

CIRC ACCESSION NO--AP0109470

2/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0109470
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACTION OF EXPLOSION DERIVED DYNAMIC COMPRESSION ON K SUB2 S SUB2 O SUB8 WAS STUDIED. UNDER THE ACTION OF AN EXPLOSION, THE DECOMPN. OF K SUB2 S SUB2 O SUB8 YIELDS K SUB2 SO SUB4 PLUS SO SUB3 PLUS 0.50 SUB2, IN CONTRAST TO THE PYROLYTIC DECOMPN., WHICH IS USUALLY DESCRIBED BY THE EQUATION: K SUB2 S SUB2 O SUB8 YIELDS K SUB2 S SUB2 O SUB7 PLUS 0.50 SUB2. THE PRODUCT OBTAINED AFTER DYNAMIC COMPRESSION OF K SUB2 S SUB2 O SUB8 HAD UNUSUAL OXIDN. AND REDN. PROPERTIES. THE VERY COMPLEX STRUCTURE OF THE IR SPECTRA OF THE PRODUCT IS DESCRIBED AND DISCUSSED IN DETAIL. THE IR SPECTRA AND X RAY DIFFRACTION PATTERNS INDICATE THE PRESENCE OF S SUB2 O SUB3 NEGATIVE NEGATIVE, S SUB2 O SUB5 NEGATIVE NEGATIVE, AND SO SUB3 NEGATIVE NEGATIVE. FORMATION OF THESE IONS PROBABLY EXPLAINS THE UNUSUAL REDUCING PROPERTIES OF THE PRODUCT AND THE PRESENCE OF H SUB2 O SUB1 IN ITS SOLNS. IN CONTRAST TO THE THERMALLY TREATED SAMPLES OF K SUB2 S SUB2 O SUB8, THE PRODUCT OBTAINED AFTER DYNAMIC COMPRESSION GIVES EPR SIGNALS SIMILAR TO THOSE GIVEN BY SAMPLES IRRADIATED BY GAMMA AND X RAYS. FACILITY: INST. TEPLOFIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

B

USSR UDC: 543.387 + 546.32.227 + 662.215.2

LAPSHIN, A. I., BORODAYEVSKIY, V. YE. and BATSANOV, S. S., Institute of Heat Physics, Siberian Department, USSR Academy of Sciences

"A Study of the Stability of Potassium Persulfate under Explosive Action"

Moscow, Khimiya Vysokikh Energiy, Vol 4, No 2, pp 154-159

Abstract: Infrared and EPR spectroscopy methods were used to study effects of explosive action on $K_2S_2O_8$, as compared to pyrolytic and radiation effects. It was determined that explosive and radiation action result in the formation of analogous paramagnetic centers, but that explosive and pyrolytic actions differ substantially in this respect. Tabular data are given on the following: (1) pH-metric titration of the persulfate following explosion; (2) infrared absorption spectra of various sulfate samples; (3) absorption spectra for both irradiated and irradiated-"exploded" persulfate; and (4) EPR spectra of the persulfate obtained under various conditions.

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USSR

UDC 612.11/.12.014.426

BORODAYKEVICH, D. T., Ivanovo-Frankovsk Medical Institute

"Effect of a Pulsed Magnetic Field on Some Biochemical Indices of the Blood of White Mice"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, 1972, pp 52-54

Abstract: White mice were exposed to a 30 min pulsed magnetic field (14,000 oe, 220 microsec pulse, 20 sec interval) after which their blood was analyzed (up to 24 hours later). Results indicated that carbon anhydrase activity and transferrin iron content increase for about 1 hour after irradiation, while the hematocrit index decreases during this time. Copper oxidase activity and hemoglobin content increase for 6 hours after irradiation. After 24 hours all indices return to normal, except for transferrin iron content, which remains below normal. Thus a pulsed magnetic field does have an effect on biochemical processes in the body.

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USSR UDC 621.385.632.01

ARISTARKHOVA, O.N., BORODENKO, V.G., MAL'KOVA, N.YA., PINCHUK, L.A., POBEDONOSTSEV, A.S.

"Optimization On Digital Computer Of Efficiency Of Multisection TWT"

Elektron.tekhnika. Nauch.-tekhn.sb.Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 7, pp 111-114 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A181)

Translation: The results are presented of an automatic optimization on a digital computer of the efficiency of a traveling-wave tube with a gap [razryv], three-phase discontinuities, and a phase discontinuity of the wave velocity. With values of the amplification parameter C = 0.1, microperveance p_{μ} = 0.8, and loss parameter d = 0.01, the electron efficiency of the optimum version of the TWT which is found amounts to 63 percent. With respect to the characteristics of the interaction mechanism, the version of the TWT considered is close to hybrid devices. Summary.

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USSR UDC 621.385.624

BORODENKO, V. G., ZAKURDAYEV, A. D., MAL'KOVA, N. Ya., POBEDONOSTSEV, A. S.

"Designing Centimeter Band Amplifying Klystron With the Aid of an Electronic Computer"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 8, pp 18-20 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12A261)

Translation: The output characteristics are presented of a 5-cavity amplifying klystron, the spatial interaction of which was otimized on a computer. The efficiency of the experimental models is 10-12 percent higher than with known advertised types of a given class. 4 ref. Summary

USSR UDC 541.14/541.183

BORODENKO, V. I.

"Surge of Photoluminescence Brightness of ZnS·Ag Phosphor During Chemisorption of Atoms of Alkali Metals"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, Vyp 12, 1971, pp 3106-3108

Abstract: A model is suggested, explaing the sudden surge of photoluminescence during the initial stage of chemisorption of cesium and potassium vapors on ZnS activated with silver. The model is based on the flow of electrons from Cs and K to ZnS, diffusion and recombination of the electrons and holes, changes in the conduction zone, and the relocation of the Fermi quasilevels.

Values of the absolute and relative surge intensity were determined in relation to the radiation density exciting the photoluminescence. The author correlated the experimental data with his theoretical approach. 3 figures.

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B

BORODIN-IN, N. G., LUK'YANOV, A. T., MOISEYEV, I. D.

"A Method for the Numerical Solution of Hyperbolic Equations"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 3, Mar 1970, pp 61-63

Abstract: The following problem is considered in the region $0 \leq x \leq a$, $0 \leq y \leq b$: $U_{xy} = A(U, x, y)U_x + B(U, x, y)U_y + C(U, x, y)$, (1)

$$U|_{y=0} = \psi(x); \quad U|_{x=0} = \varphi(y). \tag{2}$$

where $\psi(0) = \varphi(0)$. The solution of problem (1), (2) satisfied the integro-differential equation

$$U(x, y) = \psi(x) + \varphi(y) - \varphi(0) + \int_0^x \int_0^y (AU_x + BU_y + C)\,dx\,dy. \tag{3}$$

Since the analytical solution of equation (3) involves many mathematical difficulties, the following is a method for the numerical

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BORODIKHIN, R. G., et al, Vestnik Akademii Nauk Kazakhskoy SSR, No 3, Mar 1970, pp 61-63

solution of equation (3) which can be easily carried out on computers of the "static electrointegrator" type. The continuous region D is replaced by a discrete region D' with nodes $x_{i+1} = x_i + \Delta x$ and $y_{j+1} = y_j + \Delta y$, where $\Delta x = \Delta y = h$. The values of the function at the intersection are denoted by: $U(x_i, y_j) = U_i^j$, $U(x_{i+1}, y_j) = U_{i+1}^j$, and $U(x_{i+1}, y_{j+1}) = U_{i+1}^{j+1}$. Equation (3) in the region D' is written in the form

$$U_{i+1}^j = U_{i-1}^j + U_i^{j+1} - U_i^j + \iint_{\omega} [AU_{\xi} + BU_{\eta} + C]\,d\xi\,d\eta. \qquad (4)$$

where $\omega = \begin{cases} x_i \le x \le x_{i+1} \\ y_j \le y \le y_{j+1} \end{cases}$.

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BORODIKHIN, N. D., et al, Vestnik Akademii Nauk Kazakhskoy SSR, No 3, Mar 1970, pp 61-63

To determine the function U_{i+1}^{j+1} from equation (4) it is sufficient to know its values at neighboring intersections of the grid and to calculate the integral over the region ω by some approximation method. The calculations should begin from the line of initial values, shifting successively from one grid point to another over the entire region D'. The distinguishing feature of this method is that an integral that is a much smoother function than the integrand is approximated; it is possible to limit oneself to a small number of grid points and still obtain a sufficiently good approximation. An example is given.

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USSR

BORODIKHIN, V. M.

"Convergence to Solution to a Problem of Martingales"

Lit. mat. sb. [Lithuanian Mathematics Collection], 1973, 13, No 1, pp 55-70 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V37 by the author)

Translation: The convergence of general (nonmarkov and nonhomogeneous) random processes to a markov diffusion process is studied. Convergence is understood in the sense of convergence of all functionals, continuous at points in space C[0, 1] to even metrics. The drift and diffusion factors of the limiting process must be continuous and must grow in the spatial variable at not over a linear rate.

1/1

USSR

UDC 519.21

BORODIKHIN, V. M.

"Conditions of Compactness of Sets of Measures in Certain Metric Spaces"

Teoriya Veroyatnostey i Mat. Statist. Mezhved. Nauch. Sb., [Theory of Probabilities and Mathematical Statistics. Indepartmental Scientific Collection], 1970, No 3, pp 16-28, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V37 by the author).

Translation: Suppose $([x_\gamma(t), t\in[0, 1]\})_{\gamma\in\Gamma}$ is a certain set of random processes; $(\mu_\gamma)_{\gamma\in\Gamma}$ is a set of probalistic measures corresponding to processes $\{x_\gamma(t), t\in[0, 1]\}$. The conditions of A. N. Kolmogorov and N. N. Chentsov for realization of random processes in C[0, 1] and D[0, 1] are actually sufficient for realization in $\mathrm{Lip}_\beta[0, 1]$ and $D_\beta[0, 1]$ for certain $\beta > 0$, where $\mathrm{Lip}_\beta(0, 1)$ is the space of all real functions x(t), defined for $t\in[0, 1]$ with $x(0) = 0$ and such that $||x(t)||_\beta =$ a, p. 8 ; the spaces $D_\beta[0, 1]$, which are analogues of $\mathrm{Lip}_\beta[0, 1]$ for the space $D_\beta[0, 1]$ were produced and studied by M. Woodruff (RZHMat., 1969, 10V26). Sufficient conditions for compactness of sets of measures $(\mu_\gamma)_{\gamma\in\Gamma}$ and $\mathrm{Lip}_\beta[0, 1]$ and $D_\beta[0, 1]$ were given in the same terms.

1/2

USSR UDC 519.21

BORODIKHIN, V. M., Teoriya Veroyatnostey i Mat. Statist. Mezhved. Nauch. Sb., 1970, No 3, pp 16-28.

In this work, sufficient conditions are presented for realization of processes in $Lip_{\beta}[0, 1]$, $D_{\beta}[0, 1]$ and compactness of the set of measures in $C[0, 1]$, $D[0, 1]$, $Lip_{\beta}[0, 1]$, $D_{\beta}[0, 1]$ in the form of conditions of Ye. B. Dynkin and J. Kinney.

2/2

USSR UDC 616.45-001.1/.3-07:[616.433-008.6-02:615.361.814.1]-07

DRZHEVETSKAYA, I. A., and BORODIN, A. D., Department of Pathological Physiology (Professor N. N. Trankvilitati, Head) Donetskiy Medical Institute

"Corticotropin-Releasing Activity of Hypothalamic Extracts in Rats During Stress"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 42-45

Abstract: To study the content of the corticotropin-releasing factor under various kinds and durations of stress, extracts from the hypothalami of rats were prepared whose corticotropin-releasing activity was determined by the decrease of ascorbic acid content in the animals' adrenal glands. In the first series of tests the animals were subjected to acute stress: inhalation of ether vapor for 2-1/2 minutes followed by immediate decapitation; unilateral adrenalectomy, the animals being sacrificed 24 hours after surgery; intramuscular histamine (300 mg) injection, with decapitation after 1 hour, at onset of shock symptoms; intramuscular insulin (4 units per 100 grams of weight), with marked hypoglycemia with 1-1/2 hours, followed by decapitation. In the second series multiple

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

USSR

DRZHEVETSKAYA, I. A., and BORODIN, A. D., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 42-45

administration of insulin (20-25 days) was given and the animals' state 5-14 days after unilateral adrenalectomy studied. To determine the corticotropin-releasing activity, an acetate extract of hypothalamus tissue taken immediately after decapitation was injected into recipient rats whose own hypothalamohypophyseal-adrenal system had been blocked with a nembutal-aminazine-morphine compound. It was revealed that in acute stress such activity increases, apparently due to predominant processes of CRF synthesis, while under prolonged stress it decreases.

2/2

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE INFLUENCE OF EXPERIMENTAL THYROTOXICOSIS ON THE DEVELOPMENT OF COMPENSATORY HYPERTROPHY OF THE ADRENAL GLANDS -U-

AUTHOR--BORODIN, A.D.

B

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 27-30

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENAL GLAND, WHITE RAT, SURGERY, THYROID GLAND, HORMONE, ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0856 STEP NO--UR/0219/70/069/003/0027/0030

CIRC ACCESSION NO--AP0052290

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0052290
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON 240 ALBINO RATS THE AUTHOR COMPARED THE REGULARITIES OF DEVELOPMENT OF COMPENSATORY HYPERTROPHY OF THE ADRENAL GLANDS AFTER UNILATERAL ADRENALECTOMY WITH AND WITHOUT THYROTOXICOSIS INDUCED BY FEEDING THYROIDIN TO RATS. IT IS SHOWN THAT THE ACCUMULATION IN THE ORGANISM OF THYROID HORMONES ALTERS THE TERMS OF DEVELOPMENT OF COMPENSATORY HYPERTROPHY OF THE ADRENAL GLANDS: AN INCREASE OF THE RELATIVE WEIGHT OF THE ADRENALS AND INTENSIFICATION OF THEIR FUNCTIONAL ACTIVITY REACHES THE MAXIMUM TOWARDS THE FIFTH POSTOPERATIVE DAY, WHEREAS IN CONTROL ANIMALS SUBJECTED TO UNILATERAL ADRENALECTOMY A RISE OF THESE INDICES IS SEEN FOR 14 DAYS. ALONG WITH THIS THERE OCCURS AN ALTERATION OF THE DYNAMICS OF THE CORTICOTROPIN REALIZING ACTIVITY OF HYPOTHALAMIC EXTRACTS AND THE ACTH CONTENT IN THE HYPOPHYSES AT DIFFERENT PERIODS AFTER THE OPERATION. IT IS SUPPOSED THAT EXCESSIVE ACCUMULATION OF THYROID HORMONES EXERTS AN INFLUENCE ON THE HYPOTHALAMIC REGULATION OF THE HYPOPHYSEAL ADRENAL SYSTEM.

UNCLASSIFIED

USSR

UDC 629.735.33.063.7:539.622:622.75

AKSENOV, A. F., LITVINOV, A. A., KOROLENKO, YU. I., BORODIN, A. YE., and SHEPEL', A. YA., Kiev Institute of Civil Aviation Engineers

"Role of Physical and Chemical Processes in the Failure of Rolling Friction Surfaces in Low-Molecular Hydrocarbon Media"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

Abstract: Studies were conducted to test the effect of different jet fuels on rolling friction surfaces using ShKh15 steel as the test material. Fuels used were commercial T-7, deoxygenated, and T-7 + 0.025% (by weight) Akor-1. Special attention was given to determining the effect of molecular oxygen and surface-active substances on wear. Test parameters consisted of a maximum stress of 230 kg/mm^2, n = 850 rpm, and load time equal to 2 x 10^5 cycles; test temperature ranged from 20 to 120°C. Data plotted from test results showed that wear increases steadily using fuel T-7, reaching a maximum around 60°C and then drops rapidly and levels off at 120°C to less than 0.001 mm of wear. Wear was constant for the deoxygenated fuel and T-7 with Akor-1 added, being less than 0.005 mm. It was established that the anti-friction properties of fuels depend on the intensity and nature of occurrence of physical and chemical processes in the friction zone with the mandatory participation of

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AKSENOV, A. F., et al, Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

oxygen. The lubricating action of surface-active substances is considerably greater if the metal is coated with an oxide. Minimum wear is observed when oxygen content in the fuel is maximum. 2 figures, 14 bibliographic references.

2/2

USSR

UDC: 621.891: 662.75

BORODIN, A.YE., LIVINOV, A.A. and KOROLENKO, YU. I.

"Effect of Jet Fuels on Failure of Friction Surfaces of Second Kind"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Symposium of Scientific Works of Kiev Institute of Civil Aviation Engineers) 1971, vyp 2, pp 48-50 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 7, 1972, Abstract No 7.34.109)

Translation: The results of investigation of the effect of fuel mediums and of T-7 fuel volume temperature on the contact strength of SHKH15 steel are summarized. The test results show that the fuels being tested differ in their effects on pitting; the effect of T-7 fuel is the greatest, that of T-1 fuel the smallest. As to the temperature effect, the life of SHKH15 steel in T-7 fuel decreases with the increase of temperature to 60°C, increases with further increase of temperature (3 illustrations, 1 reference).

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USSR

UDC 621.374.4 (088.8)

BORODIN, B.L., GEVONDYAN, T.A.

"Frequency Multiplier"

USSR Author's Certificate No. 306543, filed 15 Apr 69, published 14 July 71 (from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2G222P)

Translation: The frequency multiplier fulfilled in the form of a series-connected pulse former, a "frequency-voltage" converter and a "voltage-frequency" converter, contains a charging unit, a comparison circuit, a switch [klyuch] and a discharging unit. With the object of an increase, variable in a wide range, of the input frequency to a whole number n, controlled in a wide range, by a synchronization of operation of the "voltage-frequency" converter by pulses of the input frequency, the output of the pulse former is connected in addition to the input of the switch of the discharging unit of the "voltage-frequency" converter.

1/1

USSR

UDC 669.046.5

BORODIN, D. I., TSIKIN, L. V., YAVOYSKIY, V. I., and VOLYNKIN, V. M.

"Sulfur Removal Through the Gas Phase in a Converter With Bottom Blowing"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS)(Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 172-176

Translation of Abstract: Metal desulfuration in a converter with bottom blowing as a result of sulfur oxidation by oxygen-containing gases is considered.

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USSR UDC: 519.2.33

BORODIN, F. M., LUKATSKAYA, M. L.

"On the Problem of Probabilistic Prediction"

V sb. Mat. metody resheniya ekon. zadach (Mathematical Methods of Solving Economic Problems--collection of works), Novosibirsk, "Nauka", 1971, pp 79-85 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V343)

Translation: The authors assume as their initial premise that when predictions are made in economics, the original data on which the prediction is based should be considered random quantities just as should the estimates of economic model parameters found from preceding observations. The model $x(t)=x(0)+at$ is considered, where t is time, $x(0)$ and a are normally distributed random quantities with parameters (x_0, σ_0) and (a_1, σ_1) respectively. The quantities $x(0)$ and a are uncorrelated. Assuming predetermined α and β, prediction is considered possible for those $t \geqslant 0$ for which the relation

$$P\left(\left|\frac{x(t)-Mx(t)}{Mx(t)}\right|<\beta\right)>\alpha$$

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BORODIN, F. M., LUKATSKAYA, M. L., Mat. metody resheniya ekon. zadach, Novosibirsk, "Nauka", 1971, pp 79-85

is satisfied. A study is made of the conditions for parameters α, β, t, $v_0 = \sigma_0/x_0$, $v_1 = \sigma_1/a_1$ under which the above relation is satisfied. Possibilities of applications are briefly discussed.

2/2

USSR

UDC 582.288:616.9-098:581.12:633.51

SALIKHOVA, B. S., BORODIN, C. I., RUNOV, V. I., and CHEPENKO, L. I.,
Microbiology Division, Academy of Sciences Uzbek SSR

"The Effect of the Toxic Compounds of Verticillium dahliae Mycelium on Gas Exchange in Cotton Leaves"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 5, 1970, pp 28-31

Abstract: The mycelium and culture fluid of V. dahliae contain a group of toxic substances that appear to play a major role in the wilting of cotton plants. When these substances are applied to the plants, the leaves show signs of Verticillium wilt (loss of turgor; appearance and luminescence of yellow spots), suggesting that the mechanism of action of the toxic substances produces changes in the chloroplasts and, consequently, in the gas exchange of the leaves. Changes in the intensity of respiration and photosynthesis in cotton leaves following application of the toxic substance of V. dahliae (yellow pigment) were studied using a gas analyzer. The yellow pigment markedly increased respiration, which reached a peak after 20 hours. Exposure of the leaves to light or addition of ADP or NAD resulted in secondary activation of respiration. After 72 hours the rate of respiration decreased; after 96 hours it was below that of the controls.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

USSR

SALIKHOVA, B. S., et al, Uzbekskiy Biologicheskiy Zhurnal, No 5, 1970, pp 28-31

Photosynthesis was simultaneously suppressed. The yellow pigment impaired the regulatory mechanism of the cells by disrupting phosphorylation in the mitochondria and chloroplasts. Thus, cotton plants affected with Verticilium wilt are apparently killed as a result of impairment of gas exchange in the leaves.

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USSR

UDC 633.51:581.2

RUNOV, V. I., and BORODIN, G. I., Academy of Sciences Uzbek SSR, Department of Microbiology

Tashkent, Fiziologiya i Biokhimiya Vozbuditeley Vilta Khlopchatnika (Physiology and Biochemistry of the Agent of Cotton Wilt), Tashkent, "Fan," 1970, 182 pp

Translation: Annotation: The physiological and biochemical characteristics of pathogenic and non-pathogenic species of Verticillium and Fusarium are given in the monograph. Results of study of the respiratory pigments, enzymes, free amino acids, and proteins are cited.

Considerable attention is given to the nature of the toxic substances of the mycelium and culture fluid, and the effect of these substances on some physiological and biochemical processes in cotton. Considerable space is taken up with the effect of chemical substances, light, and temperature on the physiological-biochemical and pathogenic properties of Verticillium dahliae. The division of Verticillium dahliae into groups differing in their pathogenesis is substantiated.

The book is intended for general microbiologists, and also for instructors and students of soil biology faculties of universities.

1/6

USSR

RUKOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

Foreward: Wilt is one of the most dangerous cotton diseases and is well-known in all of the cotton-growing regions of the world. Verticillium and Fusarium wilt have been particularly widespread in Central Asia during the past few years (Firsov, 1964; Popov, 1965). Data provided by the Institute of Plant Protection report that in the years 1960-1961 in Uzbek SSR, 66% of the cotton area in Andizhan oblast, 61% in Fergana oblast, 80% in Bukhara oblast, and 59% in Tashkent oblast were affected by Verticillium wilt. At the same time 99% of the cotton plants on the individual farms of Andishan oblast, 86% in Fergana oblast, 49% in Bukhara oblast, and 60% in Tashkent oblast were affected by the disease. In the Turkmen SSR, more than half of the fine-fibered cotton plants in the Mariysk group of rayons were infected with Fusarium wilt.

The intensive development of the parasite in the plant cells disturbs the normal growth and development of cotton, the ovaries and pods drop off, and the yield is reduced. The fibers of diseased plants are decreased in strength and are of low industrial grade (Malinin and Korol', 1964; Sauquil and Roch, 1964).

The agents of Verticillium and Fusarium wilt are Verticillium and Fusarium species of fungi. The representatives of Fusarium are typical facultative

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RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

parasites. When interacting with soil microflora and plants, they act as para sites, antagonists, symbionts, and metabionts (Bekker, $1967_{1,2}$). The representatives of Verticillium are characterized by a more vividly expressed parasitism; the pathogenic forms (Verticillium dahliae) are preserved mainly on the vegetative residue in the oil (Verner, Malyshkin, and Kvint, 1941; Benken, 1963_2; Fedotova et al, 1963; Benken and Khakimov, 1964).

The ability of the fungi to penetrate into and affect the plant depends on the aggressiveness of the fungus, the cotton variety, the phase of the plant's development, chemical composition of the soil, moisture, temperatures, and so on (Ioffe and Askarova, 1964; Urunov, 1964; Askarova and Manadaliyev, 1966; Viytenok, 1966; Sadasivan, 1950). It is known that different varieties of cotton are not similarly affected by wilt and that externally the disease is most perceptible at certain phases of the plant's development. Phosphorus-potassium fertilizers help in reducing the number of wilt-affected plants and increasing the quantity of Acetinomyces -- antagonists of Verticillium dahliae in the soil. Nitrogen fertilizers, to the contrary, increase the percentange of diseased plants and the number of fungi and bacteria in the cotton

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USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

rhizosphere (Uzenbayev, 1964; Tupenevich and Kenlikiyev, 1964; Tupenevich and Egamov, 1964; Kuznetsov, 1964; Isayev, 1964; Bekker, 1967).

The biochemical and particularly the pathogenic lability of the agents of wilt are of considerable interest. When new and highly resistant varieties of cotton are introduced, almost no wilt can be noted during the first year of the plant's cultivation. Within a few years, however, this variety begins to lose its resistant qualities, and just as the susceptible varieties of the plant, is affected by the disease (Solov'yeva and Mukhamedova, 1964). Such accommodation to new conditions of existence and the appearance of certain new mutual relationships with the plant-host are linked with metabolic changes in the parasite, and first of all its enzyme systems. There is no doubt that the struggle against cotton wilt as against any other disease will be successful with increase in the knowledge of the physiological and biochemical characteristics of the agent and the toxic substances which determine the pathogenesis.

The work was carried out at the Laboratory of Biochemistry and Microorganisms of the Microbiology Section of the Academy of Sciences Uzbek SSR. Results of investigations on the biochemistry and physiology of the agent of wilt con-

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RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

ducted in the period 1962 through 1969 and literature data are included.

5/6

USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

6/6

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ISOLATING TOXIC SUBSTANCES FROM VERTICILLIUM DAHLIAE -U-

AUTHOR-(04)-CHEPENKO, L.I., SALIKHOVA, B.S., BORODIN, G.I., RUNOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 71-2

DATE PUBLISHED-------70

B

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, PLANT TOXIN, FILTRATION, CENTRIFUGATION, ELECTROPHORESIS, PAPER CHROMATOGRAPHY, THIN LAYER CHROMATOGRAPHY, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0018 STEP NO--UR/9079/70/014/002/0071/0072

CIRC ACCESSION NO--AP0137217

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS WERE USED TO EXT. TOXIC SUBSTANCES FROM V. DAHLIAE IN AMTS. SUFFICIENT FOR ANAL. (1) V. DAHLIAE MYCELIA WERE HOMOGENIZED REPEATEDLY IN DISTD. WATER AND FILTERED. AFTER SATN. WITH (NH SUB4) SUB2 SO SUB4, THE FILTRATE AND CULTURE FLUID WERE EXTD. WITH BENZYL ALC. (2) AQ. EXTS. OF MYCELIA AND CULTURE FLUID WERE MIXED WITH NACL AND EXTD. SEVERAL TIMES WITH PHOH-CHCL SUB3 (1:1). IN EACH CASE, AFTER ADDN. OF 3 VOLS. OF ET SUB2 O, THE ORG. PHASE WAS EXTD. WITH WATER. THE AQ. EXTS. WERE CONCD. AT ROOM TEMP., AND ANY EMULSION WAS REMOVED BY FILTRATION OR CENTRIFUGATION. THE ISOLATED SUBSTANCES WERE SEPD. BY HORIZONTAL PAPER ELECTROPHORESIS INTO YELLOW AND RED PIGMENTS AND SUBSTANCES WHICH FLUORESCED IN UV LIGHT. PAPER, THIN LAYER, AND DEAE-CELLULOSE CHROMATOG. REVEALED 2 YELLOW, 3 RED, AND 3 FLUORESCENT COMPONENTS. SPECTRAL ANAL. WAS ALSO PERFORMED IN THE UV AND VISIBLE REGIONS. BOTH EXTN. PROCEDURES YIELDED THE SAME GROUPS OF TOXIC SUBSTANCES, IN PURER FORM AND IN SHORTER TIME THAN WAS PREVIOUSLY POSSIBLE. THE PHOH-CHCL SUB3 METHOD IS PREFERRED SINCE LESS EMULSION FORMS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200420020-9"

USSR

UDC: 621.316.825

BORODIN, I. F., KOPYLOV, G. A.

"Approximating the Volt-Ampere Characteristic of Posistors"

Dokl. Mosk. in-ta inzh. s.-kh. proiz-va (Reports of the Moscow Institute of Agricultural Production Engineering), 1970, 6, No 3, pp 100-107 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V316)

Translation: In order to approximate the voltage-current characteristic of a posistor, three equations are selected, two of which give a fairly accurate approximation of the initial section of the curve and can be used in designing circuits with posistors. The third equation approximates the final section of the characteristic and can be used for instance in calculating relay circuits. Two illustrations, bibliography of six titles. N. S.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ON THE DIAGNOSIS AND TREATMENT OF EARLY COMPLICATIONS AFTER OPERATION ON THE ABDOMINAL CAVITY ORGANS -U-

AUTHOR-(02)-BORODIN, I.F., GURINOVICH, A.A.

B

COUNTRY OF INFO--USSR

SOURCE--ZDRAVOOKHRANENIYE BELORUSSSII, 1970, NR 6, PP 22-24

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INTERNAL ORGAN DISEASE, SURGERY, PERITONEUM, INTESTINAL OBSTRUCTION, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0927 STEP NO--UR/0477/70/000/006/0022/0024

CIRC ACCESSION NO--AP0126586

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0126586
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS SOME DATA ON THE FREQUENCY, DIAGNOSIS AND TREATMENT OF EARLY INTRAABDOMINAL COMPLICATIONS AFTER OPERATIONS ON THE ABDOMINAL CAVITY ORGANS; THESE COMPLICATIONS HAVE BEEN OBSERVED IN THE CLINIC DURING 23 YEARS RUNNING (1945-1967). AN ANALYSIS OF COMPLICATIONS IN 82 PATIENTS HAS BEEN PRESENTED. OF THESE COMPLICATIONS PERITONITIS HAS BEEN OBSERVED IN 0.12PERCENT OF THE PATIENTS WHO HAVE UNDERGONE THE OPERATION ON THE ABDOMINAL CAVITY ORGANS, AN ACUTE INTESTINAL OBSTRUCTION HAS OCCURRED IN 0.09PERCENT AND INTRAABDOMINAL HAEMORRHAGE HAS BEEN MARKED IN 0.056 PER CENT. FACILITY: -YA KAFEDRA GOSPITAL'NOY KHIRURGII MINSKOGO MEDITSINSKOGO INSTITUTA.

USSR

UDC: 539.4:624.011

BORODIN, L. A.

"Effect of Inelastic Deformations on the Work of Structures Under Conditions of Seismic Effects"

Tr. TsNII stroit. konstruktsiy (Works of the Central Scientific Research Institute of Structural Elements), 1970, vyp. 14, pp 48-59 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V868)

Translation: The author considers deformations of elastoplastic systems subjected to harmonic effects with frequencies close to those of the first tone of oscillation of the structures. It is shown that in the case of limitation of maximum elastic displacements of elastoplastic systems to a quantity of the order of 80% of the amplitudes of oscillations of linear systems, the latter are greater than the amplitudes of analogous elastoplastic systems. In this connection, the forms of their oscillations are very close. Expressions are given for the components of energy of dynamic systems, and the concept of the energy capacity of a structural element is used to determine the time during which the system is capable of withstanding the effect of a stationary dynamic load. The proposed computational method is illustrated by examples of analysis of a four-mass system.
L. Sh. Kilimnik.
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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ALKALINE ROCK FORMATIONS AND THEIR RARE METAL MINERALIZATION -U-

AUTHOR-(04)-BORODIN, L.S., NECHAEVA, I.A., GANZEYEV, A.A., OSOKIN, YE.D.

COUNTRY OF INFO--USSR

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PETROL. AND GEOCHEMISTRY OF 2 MAIN GROUPS OF ALK. FORMATIONS ARE DISCUSSED: ALK. BASALTIC AND ALK. GRANITIC. SEVERAL FORMATIONS ARE SEPD. FROM THEM: ALK. ULTRABASIC, ALK. GABBROIC, K BASALTIC, ALK. GRANITIC, AND NEPHELINE SYENITE. THEIR DISTRIBUTION IN MAIN PETROGRAPHIC PROVINCES OF THE USSR AND FOREIGN COUNTRIES IS SHOWN TOGETHER WITH A DESCRIPTION OF THEIR DEVELOPMENT AND RELATION TO VARIOUS TYPES OF TECTONIC STRUCTURES. THE DEGREE OF ROCK JUVENILE CHARACTER, REFLECTING THE DEPTH OF ALK. MAGMA FORMATION AND PARTICIPATION OF JUVENILE ALK. EMANATION IN THE FORMATION OF VARIOUS TYPES OF ALK. ROCKS, IS CONSIDERED AS ONE OF THE MAIN FACTORS CONTROLLING PETROGRAPHIC AND GEOCHEM. PARAMETERS OF THE FORMATION. DATA ARE GIVEN ON THE DISTRIBUTION OF TYPOMORPHIC RARE ELEMENTS (BE, ZR, RARE EARTHS, LI, RB, AND SR) IN NEPHELINE SYENITE MASSIFS OF THE USSR BELONGING TO ALK. BASALTIC AND ALK. GRANITIC GROUPS. THE GEOCHEM. SPECIALIZATION OF ALK. ROCK IS CONTROLLED BOTH BY AFFILIATION WITH A DEFINITE FORMATION TYPE AND THE DEGREE OF JUVENILE CHARACTER OF ALK. MAGMAS. THE GENERAL CHARACTERISTICS OF RARE ELEMENT CONCN. IN ALK. ROCKS ARE DISCUSSED. THE RELATION OF MOST RARE METAL DEPOSITS WITH MAX. ALKALINIZED JUVENILE OR HYBRID SERIES OF BOTH ALK. BASALTIC AND ALK. GRANITIC FORMATIONS WAS PROVEN. FACILITY: INST. MINERAL., GEOKHIM. KRISTALLOKHIM. REDK. ELEM., MOSCOW, USSR.

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USSR

UDC: 620.172.251.2

BORODIN, N. A. and BORSHCHEV, N. I., Moscow Aviation Technological Institute

"The Influence of Test-Procedure Error on Scattering of the Characteristics of Long-Term Strength and Creep"

Moscow, Zavodskaya Laboratoriya, No 10, 1971, pp 1235-1237

Abstract: The article evaluates that scattering of results of prolonged static tests which is caused by errors of the investigation procedure. On the basis of the data of tests within the framework of the State Standards presently in force for the creep and long-term strength of alloy AK4-1 for three stress levels at each of three temperatures, an evaluation is made of the part played by the dispersion of characteristics, introduced by test-procedure errors, depending upon the stress level and the temperature. 1 figure. 1 table. 3 references.

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USSR

UDC 620.172.251.2

BORODIN, N. A., BORSHCHEV, N. I.

"Regularities of Scattering of Creep Characteristics"

Moscow, Zavodskaya Laboratoriya, Vol 37, No. 8, 1971, p 955-958.

Abstract: The form of the distribution function for the stable creep rate is determined and the change in characteristics of scattering of the minimum creep rate is studied. It is demonstrated that the following distributions are normal: the distribution of the logarithm of the stable creep rate in the 0,01-0,99 probability range, the distribution of the rate considering lower and upper limiting values in the entire range of probabilities. The dispersion of minimum creep rate decreases with decreasing stress and increasing durability. Scattering also decreases with decreasing base creep rate value and increasing temperature.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--LAWS GOVERNING THE DISTRIBUTION OF CREEP STRENGTH, IN ALUMINIUM ALLOYS IN RELATION TO THE STUDY OF CREEP STRENGTH -U-

AUTHOR-(02)-BORODIN, N.A., STEPNOV, M.N.

B

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SOURCE--ZAVOD. LAB., 1970, 36, (3), 338-340

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